



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/584,351

06/23/2006

Hideshi Onishi

512.46311X00

3349

20457

7590

04/29/2008

ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-3873

EXAMINER

FREEMAN, JOHN D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,351	<b>Applicant(s)</b> ONISHI, HIDESHI	
	<b>Examiner</b> John Freeman	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/06; 1/07</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-6, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya et al. (US 6,184,288) in view of Saxton (US 5,032,632).

3. Ninomiya et al. (hereafter Ninomiya) disclose ethylene-vinyl alcohol (EVOH) pellets and films made from said pellets (col 1 ln 7-12). Ninomiya saponifies ethylene-vinyl acetate to create the EVOH (col 2 ln 57-63). The pellets contain a boron compound (c1), an alkaline metal acetate (c3), an alkaline earth metal acetate (c4), and a phosphoric acid compound (c5) (col 2 ln 17-23). Ninomiya teaches the use of antioxidant compounds in the pellets (col 7 ln 24).

4. Ninomiya is silent with regard to a hindered phenol antioxidant.

5. Such antioxidants were well-known in the art at the time of the invention. For example, Saxton teaches an EVOH polymer having metal salts and a hindered phenolic antioxidant (col 2 ln 61-65, col 3 ln 1-2).

6. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use a hindered phenolic antioxidant in Ninomiya's films to improve the films' resistance to oxidation.

7. Regarding claims 1-2:

8. Ninomiya teaches the EVOH may further contain comonomers of amides, which would inherently become polyamides upon polymerization (col 3 ln 6-13). The resultant EVOH film can be used in laminates having a substrate of polyamide (col 8 ln 48).

9. Regarding the metal salts, Ninomiya mentions sodium acetate as an alkali metal salt (col 5 ln 5-9). The pellet contains 0.0001 to 0.1 part by weight of alkali salt (c3) and 0.0001 to 0.1 part by weight of

Art Unit: 1794

alkaline earth metal salt (c4). As such, the amounts used result in a range of ratios that overlap with Applicant's range.

10. Ninomiya reports the weight of phosphoric acid compound (c5) in terms of weight, and not parts-per-million as Applicant describes. The examiner takes the position that Ninomiya's disclosure of 0.0005 to 0.1 parts by weight of phosphoric acid (col 4 ln 33) overlaps with the range claimed by Applicant because Ninomiya's range is so broad. Furthermore, the range disclosed by Applicant would have been made obvious to one of ordinary skill in the art through routine experimentation.

11. Ninomiya is silent with regard to the hindered phenol antioxidant content as claimed by Applicant. Saxton reports the weight of the hindered phenol antioxidant in terms of weight, and not parts-per-million as Applicant describes. . The examiner takes the position that Saxton's disclosure of 0.05 to 0.5 weight percent (col 3 ln 1-2) overlaps with the range claimed by Applicant. Furthermore, the range disclosed by Applicant would have been made obvious to one of ordinary skill in the art through routine experimentation.

12. With respect to the overlapping ranges discussed in paragraphs 9-11, as set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

13. Regarding claims 4 and 11:

14. As mentioned, the EVOH contains a boron compound (c1).

15. Regarding claims 5-6, 12-16:

16. Ninomiya's laminates can include multiple layers. Suitable layers besides polyamide include polyolefin layers such as low-density polyethylene, high-density polyethylene, ethylene-vinyl acetate, among others (col 8 ln 37-55). The laminate can take on the structure of X/Y1/Y2, wherein X is the EVOH layer, and Y1 and Y2 are instances of others layers (i.e. polyolefin and polyamide layers) (col 8 ln 58).

17. Therefore at the time of the invention, one of ordinary skill would arrive at a structure wherein the polyolefin layer is the innermost layer, and the polyamide layer is the outermost layer in the laminate through routine experimentation.

Art Unit: 1794

Claims 3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya et al. (US 6,184,288) in view of Saxton (US 5,032,632) as applied to claims 1-2, 4-6, and 11-16 above, and further in view of Tachibana et al. (US 6,169,161).

18. Ninomiya in view of Saxton is previously explained. Both references are silent with respect to an end-capped polyamide.

19. The method of end-capping a polyamide was well-known in the art at the time of the invention. End-capping changes the terminal groups, as evidenced by Tachibana et al. (col 7 ln 31-41). The terminal group concentrations affect the overall properties of the polyamide polymer (col 8 ln 14-40).

20. Therefore at the time of the invention, it would have been obvious to one of ordinary skill in the art to use an end-capped polyamide depending on desired properties, in the combined invention of Ninomiya and Saxton.

#### ***Claim Rejections - 35 USC § 112***

21. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

22. Claims 5-6, 9-10, and 12-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

23. Each of claims 5, 9, 12, and 14 recites the limitation "the layer of the polyamide resin" in line 2 of each claim. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether Applicant intends to limit layer (I) comprising polyamide (B), or limit layer (II) comprising polyamide (C). The examiner interprets each claim to refer to layer (II) for the purpose of this Office Action.

24. Each of claims 6, 10, 13, and 15-16 recites the limitation "the layer of a polyolefin resin" in line 2 of each claim. There is insufficient antecedent basis for this limitation in the claim. Applicant makes no mention in the claims of a polyolefin resin besides these claims. Therefore, Applicant's reference to said

Art Unit: 1794

polyolefin resin, renders the claims indefinite. For the purpose of this Office Action, the examiner interprets these claims to include an extra layer besides layers (I) and (II) comprising polyolefin.

### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Odorzynski ('332), Chou ('402), and Miharu (WO '681) disclose a blend of polyamide and EVOH. Toyosumi ('938) discloses a resin containing EVOH, polyamide, and a boron component.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Freeman  
Examiner  
Art Unit 1794

/J. F./  
Examiner, Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794